

REMARKS/ARGUMENTS

This Amendment is submitted in response to the **final** Office Action dated October 30, 2008.

I. Introduction

Claims 1-32 are pending in the application. Claim 1 has been amended to improve the claim wording. No new matter has been added.

Claims 2, 4-6, 10-12, 18, 19, 22-24, 28, and 29 stand allowed. Applicant thanks the Examiner for this finding of allowability.

Claims 1, 3, 7-9, 14-17, and 31 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 20040039938 to Katz et al. (hereinafter "the Katz et al. publication").

Claims 13 and 32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication in view of Patent Publication No. 20020112073 to MeLampy et al. (hereinafter "the MeLampy et al. publication").

Claims 20, 21, 25, 26, and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication in view of Patent Publication No. 20030195861 to McClure et al. (hereinafter "the McClure et al. publication").

Claim 30 stands rejected because it "does not include the limitations of the base claims present in the other proposed independent claims".

As will be discussed below, none of the pending claims are anticipated or rendered obvious by the applied references.

II. Claims 1, 3, 7-9, and 13-17 are Patentable

Claim 1, as amended, recites the features [emphasis added]:

A method of testing a firewall comprising:
transmitting a signal, said signal being one of: a session initiation signal to initiate a communications session through said firewall and a session termination signal used to terminate an established communications session; and
monitoring to determine from the time of the transmission of said signal one of: i) **a port opening delay which occurs between a time of transmitting said signal, when said signal is a session initiation signal, and opening a port in said firewall for a communications session that is being initiated by said signal, and ii) a port closing delay which occurs between a time of transmitting said signal, when said signal is a session termination signal, and closing a port in said firewall as part of terminating an established communications session in response to said transmitted signal.**

The Katz et al. publication describes, at paragraph [0024] lines 1-5 (emphasis added):

"Referring to step 115, the **client can measure** the network latency between the client and the server. As defined herein, **network latency is** an expression of **how much time it takes a packet of data to get from one designated point to another.**"

Further in the paragraph, at lines 13-15:

"The round-trip network latency can be computed as the difference between the send time and the receive time."

Then, at paragraph [0028], lines 8-11 (emphasis added):

"The **open port duration can be re-calculated** with each new network latency measurement or when the network latency varies more than a predetermined percentage or amount."

The Examiner states on p. 4 of the Office Action that "A delay is defined as the time period between two events". Applicant agrees with this definition. The question then becomes, "What are the two events?" The Examiner goes on to state "Namely, for the opening of a port event, the delay is the time period between a closed port state and an open port state". Again, Applicant agrees that this is one "delay" associated with a port opening (let's call this "Delay 1").

Next, the Examiner states: "The Katz prior art discloses a time calculation for opening a port and closing a port." The Katz et al. publication states: "In particular, the present invention provides a solution for dynamically varying the timing of port openings and closings according to a latency value to optimize the time duration that ports are open ([0013] lines 5-9)". The two events for "the time duration that ports are open" is the opening of the port and the closing of the port. Let's call this "Delay 2". Again in [0014], lines 7-8: "...the server can compute the open port duration". Still further, in [0027] lines 5-10 (emphasis added): "Importantly, referring to decision block 130 and step 135, the network open port duration can be used to time port openings and closings so that the client and server remain synchronized until a communications session is complete. For example, **the time a port is open can be monitored.**" Finally, in [0030] lines 1-7 (emphasis added): "In consequence, the port openings and closings can be timed using a **dynamically changing open port duration** to keep the port openings and closings optimized for the network

environment. For example, if the network becomes congested and network latencies begin to increase, **a new open port duration can be computed** and shared between the client and the server."

Another "delay" in the Katz et al. publication is "round-trip latency". It's defined in [0014] lines 5-7: "...the round-trip latency also can specify a time the client sends a request and a time the client receives a response to the request". Let's call this "Delay 3", where the two events are "sends a request" and "receives a response to the request".

Claim 1 recites delays which are different from those recited in the applied reference. Claim 1, as amended, recites:

*monitoring to determine from the time of the transmission of said signal one of: i) **a port opening delay** which occurs between a time of transmitting said signal, when said signal is a session initiation signal, and opening a port in said firewall for a communications session that is being initiated by said signal, and ii) **a port closing delay** which occurs between a time of transmitting said signal, when said signal is a session termination signal, and closing a port in said firewall as part of terminating an established communications session in response to said transmitted signal*

One of the delays recited in claim 1 is a "port opening delay" which occurs between the two events: "a time of transmitting said signal" and "opening a port in said firewall for a communications session that is being initiated by said signal". A second delay which is recited in claim 1 is a "port closing delay" which occurs between the two events: "a time of transmitting said signal" and "closing a

port in said firewall as part of terminating an established communications session in response to said transmitted signal".

The Examiner's "Delay 1" is not found in any of the references and is not found or recited in amended claim 1. Similarly, "Delay 2" and "Delay 3" cited by the Examiner are found in the Katz et al. publication, but **NOT** in claim 1. Further, the claim 1 "delays" are not found in the Katz et al. publication. There is no "session initiation signal" and no "session termination signal" disclosed in the Katz et al. publication. Further, measuring the time between "transmitting said signal" and "opening a port" is not taught or suggested in the Katz et al. publication (nor in any of the cited references). Measuring the time between a "session termination signal" and "closing a port" is likewise not taught or suggested in the Katz et al. publication (nor in any other cited reference).

The Examiner states on p. 4 of the Office Action: "The Katz prior art discloses a time calculation for opening a port and closing a port. This time calculation includes a time delay portion calculation". This is true, but it is a description of "Delay 2" or "Delay 3", not the claim 1 "delays". Delays 2 and 3 are in the Katz et al. publication, but not in claim 1.

The Examiner goes on to state: "Katz discloses the calculation of multiple types of delay and an opening and closing delay is well known in the art (see Katz paragraphs [0011] and [0012]: multiple types of delay)". It is of note that the Examiner acknowledges that there are "multiple types of delay". Applicant again agrees that the Katz et al. publication teaches multiple delays ("Delay 2" and "Delay 3",

for example). However, none of the cited art teaches or suggests the "delays" found in claim 1.

On p. 4 of the Office Action, the Examiner states:

"In order to adjust a value, the current state of a value namely the delay time (time period between closed and opened states or between opened and closed states) must first be determined, and then the value can be adjusted. The Katz prior art discloses the determination of a port opening time period and a port closing time period. The delay value is the time period for a transition from one state to the next state."

It appears that the Examiner is again referring to "Delay 1". First, that is not the only delay involving opening or closing a port. Second, the "delay" referred to by the Examiner ("the time period for a transition from one state to the next state") is not measured or discussed in the Katz et al. publication (nor recited in claim 1).

On p. 4 of the Office Action the Examiner states:

"The opening of a port is a communications initiation function and is the first signal to pass through a communications session interface. (see Katz paragraph [0014], lines 4-9; paragraph [0016], lines 5-10: time stamp communications processing; paragraph [0013], lines 5-9; paragraph [0030], lines 1-4)."

However, the referenced passages refer to "round-trip latency", "open port duration", and the "time duration that ports are open". These, again, are what we have called "Delay 2" and "Delay 3". Neither of these delay types is recited in claim 1 (and the recited "delays" in claim 1 are not found in the Katz et al. publication).

For at least these reasons, **claim 1 is patentable over the Katz et al. publication.**

Claim 3, for at least the reason of being dependent on allowable claim 1, is therefore also patentable over the Katz et al. publication.

Additionally, the Examiner states on p. 6 of the Office Action regarding claim 3 that the Katz et al. publication shows "port closing delay at [0014] lines 2-8 and/or [0024] lines 5-9". However, neither of these references mentions or describes "port closing delay", nor teach or suggest the features of claim 3.

Claim 7 recites the feature [emphasis added]:

*measuring a **port closing delay time associated with the closing of said at least one port following the transmission of said signal to terminate said communications session***

As discussed above, the Katz et al. publication does not teach or suggest a **port closing delay time**, where the two events are a "signal to terminate said communications session" and a "port closing time".

Again, the Examiner states on p. 6 of the Office Action that the Katz et al. publication shows "measuring a port closing delay time associated with the closing of said at least one port following the transmission of said signal to terminate said communications session". However, as found in claim 7, the Katz et al. publication does not differentiate between a "signal to terminate said communications session" and "the closing of said at least one port"; therefore it doesn't teach or suggest measuring the time between these two events, and therefore doesn't teach or suggest "port closing delay time".

For at least this reason, **claim 7 is patentable over the Katz et al. publication.**

Claims 8, 9, and 13, for at least the reason of being dependent on allowable claim 7, are therefore also patentable over the Katz et al. publication.

Further, regarding claim 8, the Examiner states on p. 7 of the Office Action that the Katz et al. publication shows "port closing delay determination at [0024] lines 5-9". This reference refers to network latency, not port closing delay.

Claim 8 is additionally patentable over the cited reference as it recites the further feature:

wherein said port closing delay is a time period which occurs between the time a signal used to cause the closing of the port is detected and said port ceases to allow communications signals to pass through from the first side of said firewall to the second side of said firewall

Again, the Katz et al. publication discloses timing port openings and closings, whereas claim 8 discloses: a "port closing delay", which is further defined as: "a time period which occurs between the time a signal used to cause the closing of the port is detected and said port ceases to allow communications signals to pass through from the first side of said firewall to the second side of said firewall".

There is no mention or suggestion in the Katz et al. publication of "determining when a signal to cause the closing of the port is detected", nor of the time that "said port ceases to allow communications signals to pass through", or to measure the time period between those two events.

Further, there is no teaching or suggestion of "determining when a signal to cause the closing of the port is detected", nor of the time that "said port ceases to allow

communications signals to pass through", or to measure the time period between those two events.

For at least these additional reasons, claim 8 is patentable over the cited reference.

Regarding claim 9, the Examiner states on p. 7 of the Office Action that the Katz et al. publication discloses "test signals at [0024] lines 5-9". Applicant cannot find any reference to "test signals" in that cited passage.

It should be noted that the MeLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference regarding claims 7, 8, 9, or 13.

Claim 14 recites the feature [emphasis added]:

determining a time when said test signals first pass through said at least one port, said at least one port being opened in response to said signal to initiate a communications session; and determining a port opening delay which occurs in regard to opening a port in said firewall for said communications session from said determined time

The Examiner cites the same passages in the Katz et al. publication regarding claims 14-17 as cited against claims 1, 3, 7, 8, and 9. For the reasons given above in relation to those claims, **claims 14-17 are patentable over the Katz et al. publication.**

Claims 15-17, for at least the additional reason of being dependent on allowable claim 14, are also patentable over the Katz et al. publication.

It should be noted that the MeLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

III. Claims 20, 21, and 25-27 are Patentable

Claims 20, 21, 25, 26, and 27 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the Katz et al. publication in view of the McClure et al. publication.

Claim 20 recites the feature [emphasis added]:

*an analysis module for determining at least a **port closing delay** from a **session signal time** and a **time probe signals are detected to stop passing through a port** in said firewall corresponding to an initiated communications session.*

As discussed above, the Katz et al. publication does not teach or suggest "port closing delay", for any purpose, but certainly not by determining the time from "a session signal time" and a "time probe signals are detected to stop passing through a port".

The Examiner states on p. 11 of the Office Action that the Katz et al. publication discloses "detected to stop passing through a port in said firewall". However, the cited reference describes "network latency"; not "port closing delay" as recited in claim 20.

The Examiner goes on to cite the McClure et al. publication. However, the McClure et al. publication does not monitor "port closing delay". For example, at paragraph 0162, lines 3-5: "the ICMP scanning process sends 100 ICMP echo requests and monitors responses and time-outs." There is no

determination of the time from "a session signal time" and a "time probe signals are detected to stop passing through a port".

The Examiner goes on to cite paragraph 0171, lines 1-4: "For each open TCP port located during the service discovery phase, a TCP data probe is sent to that port if the port is known to by typically associated with a particular service." Again, there is no timing of port delays.

The Examiner next cites paragraph 0172, lines 1-4, which also doesn't teach or suggest determination of the time from "a session signal time" to a "time probe signals are detected to stop passing through a port". The cited portion states: "For each UDP port discovered during the service discovery phase, a similar UDP data probe is sent to each UDP port on the target computer known to be typically associated with a service." Sending a probe out will not result in a determination of "port opening delays" or "port closing delays", but will simply identify which ports are open or closed at any given time.

Therefore, since neither the Katz et al. publication nor the McClure et al. publication teach or suggest the features of claim 20, no combination of the references could do so.

For at least these reasons, **claim 20 is patentable over the Katz et al. publication in conjunction with the McClure et al. publication.**

Claim 21, for at least the reason of being dependent on allowable claim 20, is therefore also patentable over any combination of the cited references.

Claim 25 recites the feature [emphasis added]:

*a test signal analyzer for detecting probe signals passing through said first side of said firewall to said second side of said firewall and for **determining port closing delays** as measured from the time the test signal analyzer detects a signal used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall.*

As discussed above, the Katz et al. publication does not teach or suggest "**determining port closing delays**" or measuring the "**time the test signal analyzer detects a signal used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall**".

Also as discussed above in relation to claim 20, there is no reference in the Katz et al. publication to "ceases to detect test signals passing through said firewall" (p. 13 of the Office Action).

The Examiner cites the McClure et al. publication in conjunction with the Katz et al. publication. As discussed above, the McClure et al. publication does not monitor "port closing delays". For example, at paragraph 0162, lines 3-5: "the ICMP scanning process sends 100 ICMP echo requests and monitors responses and time-outs." There is no determination of the time from "a session signal time" to a "time the test signal analyzer detects a signal used to close a port in said firewall and said analyzer ceases to detect test signals passing through said firewall".

The Examiner goes on to cite paragraph 0171, lines 1-4: "For each open TCP port located during the service discovery phase, a TCP data probe is sent to that port if the port is known to by typically associated with a particular service." Again, there is no timing of port delays.

The Examiner next cites paragraph 0172, lines 1-4: "For each UDP port discovered during the service discovery phase, a similar UDP data probe is sent to each UDP port on the target computer known to be typically associated with a service." Sending a probe out will not result in a determination of "port opening delays" or "port closing delays", but will simply identify which ports are open or closed at any given time.

For at least these reasons, **claim 25 is patentable over the Katz et al. publication in conjunction with the McClure et al. publication.**

Claims 26 and 27, for at least the reason of being dependent on allowable claim 25, are therefore also patentable over any combination of the cited references.

IV. Claims 30-32 are Patentable

Claim 30 recites the features [emphasis added]:

transmitting session termination signals used to control the termination of communications sessions through said firewall at an increasing rate; and

measuring the effect of the increasing rate of session termination signals on port closing delays associated with the termination of communications sessions through said firewall.

The Examiner does not state any specific references for rejecting claim 30. However, in a previous Office Action, the Examiner cited paragraph 0013, lines 5-9 to support "transmitting session signals at an increasing rate". However, the citation reads: "In particular, the present

invention provides a solution for dynamically varying the timing of port openings and closings according to a latency value to optimize the time duration that ports are open". There is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays". The reference is to change the **duration** of port openings.

The Examiner goes on to cite paragraph 0030, lines 1-4 [emphasis added]: "In consequence, the port openings and closings can be timed using a dynamically changing open port **duration** to keep the port openings and closings optimized for the network environment". Again, there is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays". The reference is to change the **duration** of port openings.

The Examiner goes on to cite paragraph 0034, lines 1-5 (see citation above), which refers to "monitoring network latency" to "dynamically adjust the open port duration". There is no mention of "transmitting session termination signals ...at an increasing rate" or of "measuring the effect of the increasing rate" on "port closing delays".

For at least these reasons, **claim 30 is patentable over the Katz et al. publication.**

Claims 31-32, for at least the reason of being dependent on allowable claim 30, are therefore also patentable over the Katz et al. publication.

Regarding claim 31, the Examiner refers on p. 9 of the Office Action to [0024] lines 5-9, and [0025] lines 7-9. These refer to "network latency", not to "determining the

session signal rate which results in a maximum acceptable port closing delay being exceeded".

It should be noted that the McLampy et al. publication does not supply any of the above noted deficiencies in the Katz et al. publication reference.

V. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the pending claims are in condition for allowance¹. Accordingly, it is requested that the Examiner pass this application to issue.

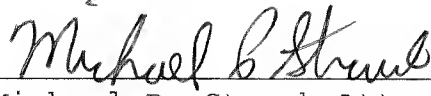
If there are any outstanding issues which need to be resolved to place the application in condition for allowance **the Examiner is requested to call (732-542-9070) and schedule an interview with Applicant's undersigned representative.** To the extent necessary, a petition for extension of time under 37 C.F.R. 1.136 is hereby made and any required fee in regard to the extension or this amendment is authorized to be charged to the deposit account of Straub & Pokotylo, deposit account number 50-1049.

None of the statements or discussion made herein are intended to be an admission that any of the applied references are prior art to the present application and Applicants preserve the right to establish that one or more of the applied references are not prior art.

¹ As Applicant's remarks with respect to the Examiner's rejections are sufficient to overcome these rejections, Applicant's silence as to assertions by the Examiner in the Office Action or certain requirements that may be applicable to such rejections (e.g., whether a reference constitutes prior art, ability to combine references, assertions as to patentability of dependent claims) is not a concession by Applicant that such assertions are accurate or such requirements have been met, and Applicant reserves the right to analyze and dispute such in the future.

Respectfully submitted,

December 23, 2008

A handwritten signature in cursive script, reading "Michael P. Straub", written over a horizontal line.

Michael P. Straub Attorney

Reg. No. 36,941

Tel.: (732) 936-1400